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Deaths in U.S. Horses, 1997 and Spring 1998-Spring 1999

One priority in the needs assessment phase of the National Animal Health Monitoring System's (NAHMS) Equine '98 study was to describe health problems in the U.S. equine population.

This USDA program collected data on equine health and management practices from a stratified random sampling of equine operations in 28 states¹ as part of the Equine '98 study. These operations represented about three-fourths of the equine population and three-fourths of operations with equids in the U.S. Overall 2,904 operations with one or more equids participated in the first interview from March 16 through April 10, 1998.

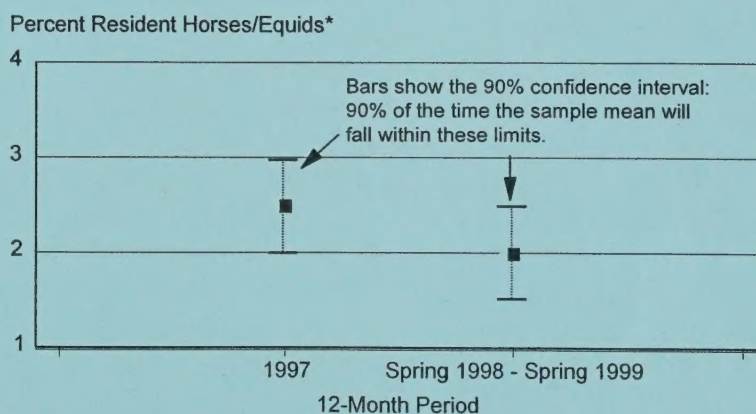
Participants in the Equine '98 study were asked to report the number of mortalities in their resident equids in 1997. A resident equid was described as one which spent or was expected to spend more time at the operation than at any other operation (i.e., its home). Mortality rates were calculated as a percent of the operation's equine inventory within age categories. Results were reported in August 1998 in *Part I: Baseline Reference of 1998 Equine Health and Management*. The mortality estimates in Part I included all domestic equids (such as ponies, miniature horses, donkeys/burros, and mules), not just horses. However, since the majority (88.3 percent) of equids were full-size horses or horse foals (as reported in Part I), the estimates likely paralleled the overall mortality for horses. Estimates were for equids on all sizes of operations.

Operations with three or more full-size horses or horse foals on January 1, 1998, were eligible to participate in the second phase of the Equine '98 study. The second phase included three personal interviews: Spring 1998, Summer 1998, and Winter

1998-1999 with a followup telephone call in the spring of 1999. During this followup telephone call, participants were asked to provide information regarding deaths of horses in the previous 12 months. Mortality estimates reported from this 12 month period reflect deaths among horses from the spring of 1998 to the spring of 1999 as a percent of the summer inventory for operations with three or more full-size horses or horse foals on the operation on January 1, 1998. For comparison purposes, only operations with three or more horses on January 1, 1998, were included for both the 1997 estimates and the Spring 1998 to Spring 1999 estimates.

Mortality for equids of all ages in 1997 was 2.5 percent (90 percent confidence interval equals 2.0 to 3.0 percent, Figure 1). (If the sampling that was used to create this estimate was repeated 100 times, the sample mean would lie between these limits 90 times.) The mortality for horses of all ages for the period Spring 1998 to Spring 1999 was 2.0 percent (90 percent confidence interval equals 1.5 to 2.5 percent).

Figure 1
Percent of Resident Horses/Equids* that Died or Were Euthanatized in 1997 and Spring 1998 to Spring 1999



* 1997: deaths as a percentage of Equine '98 August 1, 1997, resident equid inventory. #4391
Spring 1998 - Spring 1999: deaths as a percentage of Equine '98 summer visit resident horse inventory

¹Alabama, California, Colorado, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Montana, New Jersey, New Mexico, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Texas, Virginia, Washington, Wisconsin, and Wyoming.

Figure 2

According to the National Agricultural Statistics Service (NASS), the number of equids in the 28 states on January 1, 1998, was 4,029,000 head. Since the annual mortality rates were between 1.5 and 3.0 percent, equine deaths in the 28 states can be estimated between 60,000 and 121,000 head annually.

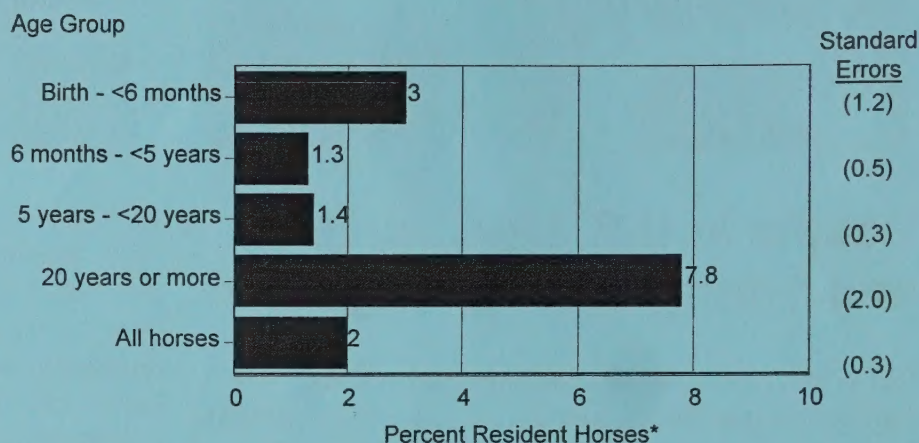
Figure 2 shows mortality rates for the period Spring 1998 to Spring 1999 were higher for the horses of less than 6 months of age (3.0 percent) and for those of 20 years or more (7.8 percent) than the middle age groups.

The top three causes of death for all ages of horses/equids were the same for both 1997 and the period Spring 1998 to Spring 1999. Causes of death included old age, colic, and a combined category of injury, wounds, and trauma (Table 1). The estimates indicate that these are the leading causes of U.S. horse mortality. Thus, it would be important to note any substantial change in these percentages, as a change could reflect an emerging disease with high mortality which should be addressed promptly.

In both years, the most commonly reported causes of death in the less than 6 months of age group were respiratory disease, injury/wounds/trauma, and unknown causes.

During both 1997 and the period Spring 1998 to Spring 1999, approximately two-thirds of the deaths in horses of 20 or more years of age were attributed to old age. In the period Spring 1998 to Spring 1999, 64 percent of the horses that reportedly died of old age were euthanatized, while the remainder reportedly died of natural causes. The most common specific causes of death in the oldest age category were weight loss and inability to ambulate.

Percent of Resident Horses* that Died or Were Euthanatized in the 12 Months Preceding the Spring 1999 Followup Telephone Call



* As a percent of the Equine '98 summer visit resident horse inventory within age class.

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Table 1. Percentage of resident equid/horse deaths (including euthanasia) by the top three reported causes for 1997 and period Spring 1998 to Spring 1999 for operations with three or more horses on January 1, 1998.

Cause	Equid Deaths for 1997		Horse Deaths for period Spring 1998 to Spring 1999	
	Percent	Standard Error	Percent	Standard Error
Old age	21.0	(4.1)	22.9	(6.3)
Colic	18.1	(4.0)	18.0	(4.7)
Injury/wounds/trauma	12.0	(4.2)	16.2	(4.3)

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